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THE DENTAL DIGEST

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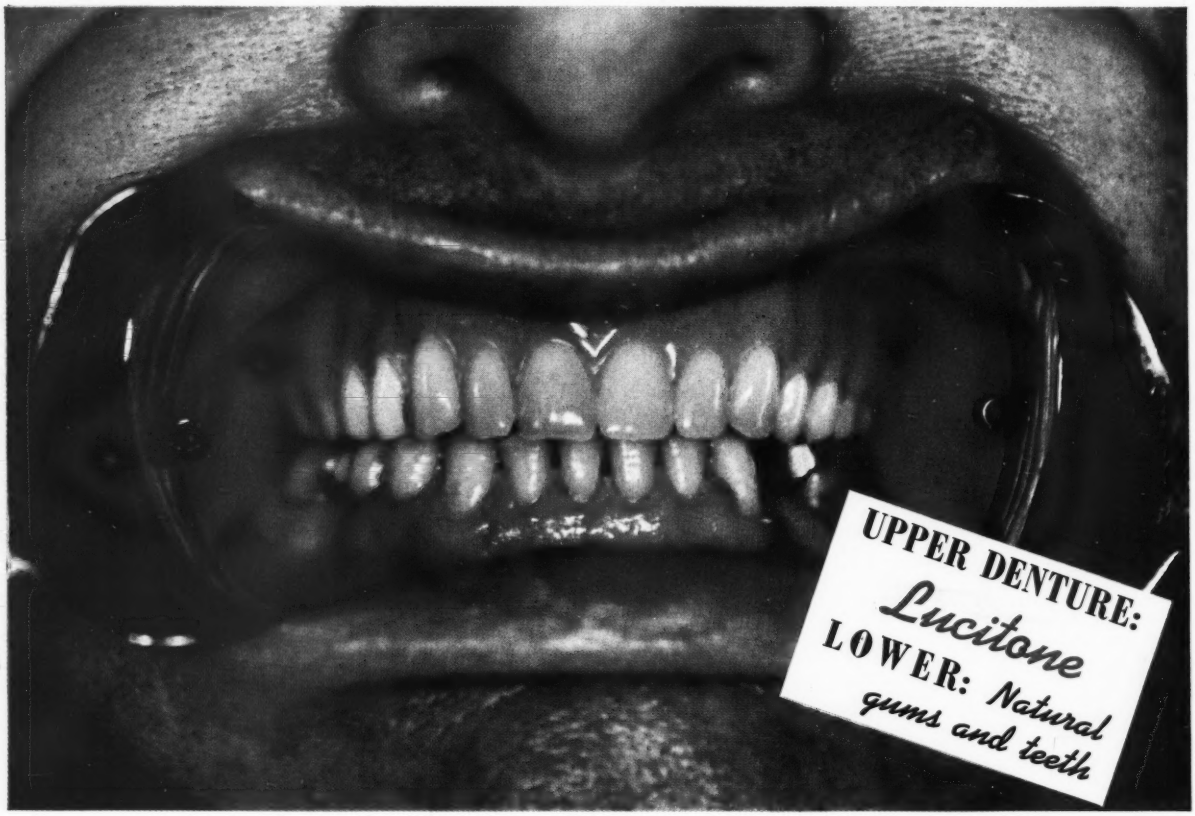

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About Our CONTRIBUTORS

HERBERT EDWARD WEIS has his D.D.S. from the University of Illinois College of Dentistry (class of 1931). Doctor Weis is a general practitioner who makes his introduction to these pages with AN EASY TECHNIQUE FOR MAKING PORCELAIN PONTICS.

•

JEROME G. BACCHI received his D.D.S. in 1923 at The Thomas W. Evans Museum and Dental Institute, University of Pennsylvania. Doctor Bacchi is a general practitioner who is publishing for the first time with this magazine. VITO LA ROCCA M.D. (Royal University, Palermo, Italy, 1928) collaborated with Doctor Bacchi in the treatment and presentation of the case they are reporting here. Doctor La Rocca is visiting surgeon in ophthalmology at Columbus Hospital, New York.

•

GEORGE WARD GLANN received his D.D.S. at the State University of Iowa College of Dentistry in 1937 is another general practitioner who this month likewise becomes a DIGEST author for the first time. Doctor Glann was a demonstrator in operative dentistry at his school and engaged in research in diet and dental caries at the Children's Hospital, University of Iowa (1937-1938).

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CLAUDE REID KRUSE has his D.D.S. from the College of Physicians and Surgeons, School of Dentistry, San Francisco (1911) where he taught dental materia medica and therapeutics for three years. With his illustrated technique in this issue, Doctor Kruse joins the DIGEST list of general practitioner-authors.

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LEVON M. SAGHIRIAN, D.D.S. (University of Pennsylvania, 1924) is the author of several articles on anesthesia, one published in the April, 1938 issue of this magazine on THE TECHNIQUE OF OPEN-DROP ADMINISTRATION OF VINYL-ETHER. Doctor Saghirian is a general practitioner with a special interest in oral surgery. He has been on the maxillofacial surgery service of the Graduate Hospital since 1934; he has also been instructor in stomatology since 1937 at the Graduate School of Medicine—both of the University of Pennsylvania. His present article ELECTROSURGERY IN THE MOUTH is illustrated with full color plates as well as black and white reproductions.

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An Easy Technique for Making Porcelain Pontics

HERBERT E. WEIS, D.D.S., Chicago

A SIMPLE TECHNIQUE for building porcelain pontics for fixed bridges employing long-pin facings or trupontics is presented here. The method is the same for the two types of facings except that an additional step is required when long-pin facings are used. This step is the baking of a shelf to the facing.

Baking of Shelf to Long-Pin Facing

1. The porcelain for the shelf may be applied to the facing readily by the use of a device. This device is made from a pair of lock pliers, one arm of which has been shortened, and a platform of highly polished German silver soldered to the short arm (Fig. 1). Other similar devices may be obtained from the supply houses.

2. The long-pin facing is held in place and the porcelain applied (Fig. 2).

3. The porcelain is vibrated and molded to the desired quantity and shape; no attempt is made to mold this shelf so as to conform to the ridge; all that is wanted is sufficient bulk.

4. After the excess moisture has been removed by means of a dry piece of plaster or a dry cloth, the arm of the pliers is released, and the mass may be pushed off the platform and is ready for baking. Removal from the pliers will be facilitated if the platform has been lightly lubricated with oil before the porcelain is applied.

The porcelain used for this shelf must be high enough in fusing temperature to permit a lower-fusing porcelain to be added later. Medium-fusing porcelain for shelf and low-fusing porcelain for the later addition is a good combination. The lower-fusing porcelain is used for the later addition because it is added after a casting has been made to fit porcelain that has already been baked and adapted; thus the chance of distortion or rounded margins is eliminated.

When the shelf has been added to the long-pin facing the remainder of the technique is the same as for a trupontic (Fig. 3).

Procedure Using Trupontic Facings

1. When the cast, with the abutment pieces in place has been articulated, a suitable trupontic facing is selected.

2. The ridge surface of this facing is roughly and quickly ground with a large heatless stone, so that the facing can be placed in position for proper alinement and occlusion. No attention is paid to the manner of fit on the ridge of the cast. This will be corrected later. The facing can be alined in this manner in a few minutes (Fig. 4).

3. A piece of soft wax will hold the facing in position while a plaster matrix is poured. This matrix will maintain the desired position of the facing during the construction of the bridge (Fig. 5).

4. The pontic is now waxed, carved, invested, cast, and soldered to the abutments.

5. After it is soldered, the bridge is ground and polished ready for setting before the final adaptation of porcelain to the pontic.

Thus the bridge has been carried to that point of completion where it is ready for setting in the mouth except that the saddle portion of the pontic has not been adapted to the ridge (Fig. 6).

6. This final adaptation may be

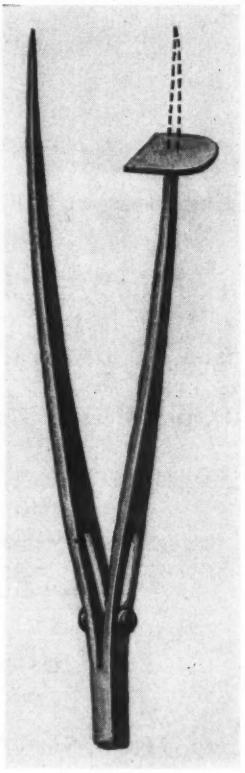


Fig. 1

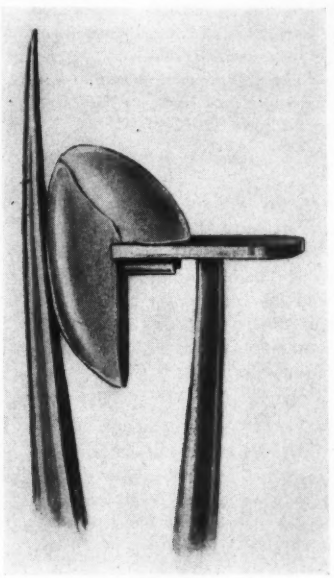


Fig. 2

Fig. 1—"K" pliers adapted for adding shelf to long-pin facing.
Fig. 2—Facing is held firmly in pliers while porcelain is added and condensed.

completed easily and accurately in the following manner:

a) The bridge is removed from the cast and the edentulous area of the cast given a thin coating of collodion. (This area may be coated at the time of removal for soldering and thus will be drying during subsequent soldering and finishing.) The purpose of coating with collodion is to give a smooth surface which is impervious to oil and moisture, and it is especially necessary if the bridge is being built upon a stone or plaster cast. If a metal cast is used, the collodion is not essential if the ridge area is or has been scraped smooth. If, however, the ridge is irregular, it is simpler to obtain a glossy area with a thin coating of collodion.

b) When the coated area has dried, it is lightly painted with a thin grade of machine oil, so that the area is covered with a film that is thin enough to keep from forming pools in any depressions on the ridge. This oily film is not wiped, as it is to prevent the applied porcelain from adhering to the ridge.

c) After the cast has been prepared as outlined, the finished bridge, with the unfinished facing in place on the pontic, is held between the thumb and fingers while sufficient moist porcelain to form a slight excess is heaped on the saddle surface of the facing (Fig. 7). This surface should be clean for better fusion.

d) The porcelain should be wet enough to adhere and be easily applied, but sufficient moisture may be removed with a dry cloth or plaster so that the mass will hold its shape unless vibrated.

e) While the facing is kept in place the bridge is carried to the cast and gently vibrated to place by drawing a serrated instrument over a margin of the pontic. The moist porcelain will spread and adapt itself readily to the ridge (Fig. 8).

f) Again sufficient moisture is removed so that the adapted porcelain will hold its shape.

g) Some excess may be trimmed away before removal from the cast but enough is allowed for shrinkage in baking.

h) The bridge is vibrated only enough to adapt the porcelain, as bubbles may form at the union with the facing and sometimes prevent complete fusion.

i) The bridge is carefully removed from the cast with the facing still in

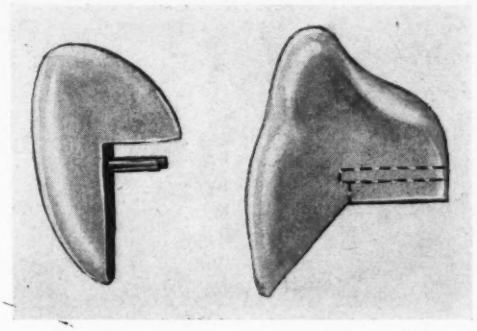


Fig. 3—Note similarity of trupontic to built-up long-pin facing.

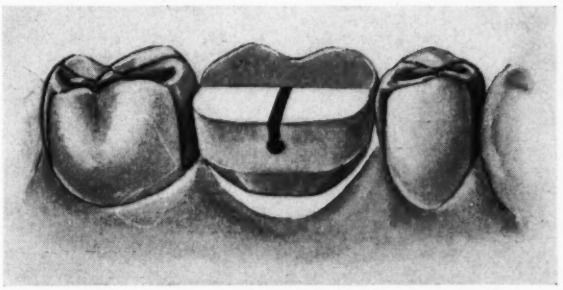


Fig. 4—Facing has been ground only to alinement and does not fit the ridge.

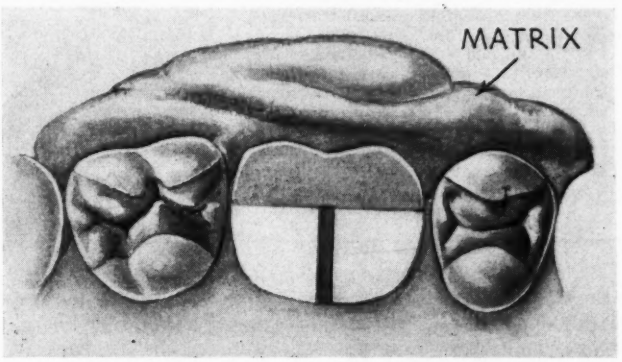


Fig. 5—Occlusal view with plaster matrix in place. This allows facing to be returned accurately to place during construction of bridge.

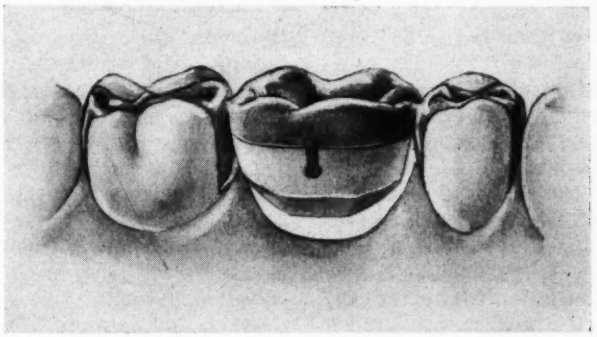


Fig. 6—Bridge is soldered and polished with unfinished facing in place.

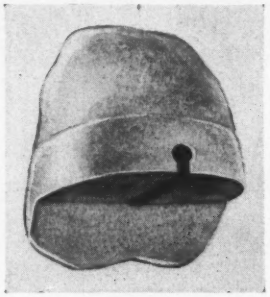


Fig. 7

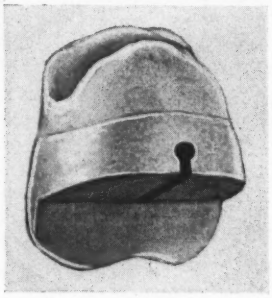


Fig. 9

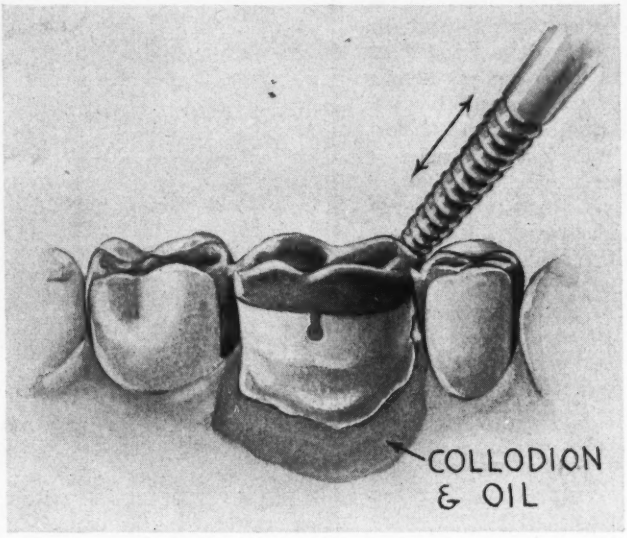


Fig. 8

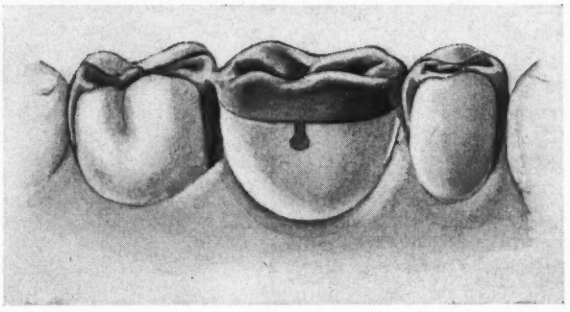


Fig. 10

Fig. 7—Porcelain is applied in a rounded heap on saddle surface of unfinished facing. This prevents trapping air between porcelain and ridge of case.
Fig. 8—Method of vibrating bridge to place on cast. Note excess of porcelain around facing.
Fig. 9—Finished facing ready for cementation. Excess porcelain has been removed from sides and facing has been superglazed.
Fig. 10—Lingual view of finished bridge with adapted facing conforming accurately to ridge.

place. If the cast has been properly treated with collodion and oil, the porcelain will come away from the cast readily and cleanly.

j) The abutment teeth on the cast may be relieved after soldering, so that the bridge can be freely seated and removed from the cast.

k) The facing is removed from the bridge and carefully placed in an oven. When more than one pontic is contained in the bridge, the pontics are adapted as described, one at a time.

l) After baking, the excess porcelain can be removed from the sides of the facing with a stone, and the pontic tapered or shaped as desired. No correction is necessary in the ridge surface as it will be smooth and will conform accurately to the ridge (Fig. 9).

m) Because different fusing porcelains are contained in the built-up facing, it is necessary to apply superglaze to obtain the final glaze. This is applied, and thoroughly vibrated to obtain a smooth glaze in one bake, to all ground surfaces that will be exposed when the facing is in place in the pontic. The closeness of the adaptation of the pontic saddle to the ridge may be varied by relieving the cast before painting with collodion.

Experience has shown that it is usually unnecessary to relieve the cast as the shrinkage of the porcelain in baking gives the proper clearance from the ridge. This clearance in the mouth is soon filled in by the proliferation of healthy gum tissue. The closeness and accuracy of the adaptation of the porcelain and its highly glazed surfaces produce a clean prosthesis (Fig. 10).

Summary of Important Features

1. Add enough porcelain to the long-pin facing to insure a large enough shelf to permit proper shaping of the pontic.

2. Be sure to use a higher fusing porcelain for the shelf than that used for the final adaptation, so that the shelf will not be changed in the second baking.

3. Do not spend time in grinding the built-up pin or stock trupontic facing to the ridge. Even if the facing contains sufficient bulk this may be done more quickly and accurately as described.

4. Always paint the edentulous area of the stone cast with thin col-

(*Continued on page* 28)

Relation Between Corneal Ulcers and Diseases of the Mouth

JEROME G. BACCHI, D.D.S., Brooklyn and VITO LA ROCCA, M.D., New York

THE CASE TO BE reported here seems to prove both theories of selective localization: the Rosenow[1] theory, which was confirmed by Haden[2] and Nickel[3], and also the theory of clinical observers who believe that the "spots of lowered resistance" cause selective localization.

Report of Case

R. B., a man, complained of violent pain, lacrimation and photophobia in the right eye of two days' duration. He stated that since childhood, he had been affected with trachoma, for which he had been treated at various times, the last time, five years previously. He had ulcers of the cornea in both eyes.

Examination—Examination showed a cicatricial form of trachoma in both eyes with whitish shining scars in the conjunctiva palpebralis, and slight entropion of the lids.

The cornea in the right eye showed a typical pannus with vascularization extending from the upper limbus to about one third of the cornea. The apex of the pannus was ulcerated and the substantia propria was infiltrated for an extension of 4 square millimeters in the central area.

The left eye presented a similar picture but there was no ulceration of the pannus.

Suggested Treatment—The patient was advised to have an operation, namely, a peritomy, for the purpose of dissecting away the vascularization of the cornea. Regular treatments of the ulcer were to follow, but the patient failed to return for four days.

Second Examination—The process was found to be far more advanced in the right eye and there was involvement of the other eye. The cornea in the right eye was completely infiltrated. The opacity extended deep into the parenchyma and the central part showed some sloughing of the epithelium and of the substantia propria: the circumcorneal injection was pronounced and there was tenderness at the ciliary region, indicating a secondary iritis. At the slit-lamp examination, the aqueous humor showed many floating corpuscles and deposits on the Descemet's membrane.

The left eye was likewise inflamed and had the appearance of the right eye five days previously.

Bacteriologic Examination—A smear taken from the conjunctival secretion showed the presence of *Streptococcus viridans,* pneumococci and staphylococci.

Treatment—A strong treatment was begun. In addition to the usual treatment of the ulcer and the secondary iritis, a peritomy was performed on both eyes; foreign protein therapy was employed and hemotherapy. A few weeks of this treatment did not show any improvement in the condition.

In view of the rapid advance of the pathologic processes, it was believed that the complication of the suppuration of the cornea was secondary and was due to some focus of infection. The patient was advised to see his own dentist for a complete oral examination.

Dental Report—The gingiva was found to be inflamed. The gums had receded so that part of the roots could be seen. A thin exudate appeared. The bite was normal; no cavities were present; there was little cervical calculus. The hygiene of the mouth was fair. Roentgenograms showed a typical periodontitis with the pathologic absorption of the bone of the horizontal type. There was a diffuse absorption all over the mouth which was more predominant in the molar and bicuspid regions of both the maxilla and mandible.

Bacteriologic Examination: Smears were made of the exudate and from the depths of the pockets of the gingiva. A predominance of *Streptococcus viridans* was present with some pneumococci and staphylococci; also some *Leptothrix buccalis.* The same type of organism had been found in the mouth as in the ulcer of the cornea. In collaboration with Doctor La Rocca treatment was instituted.

Treatment: In the period of about one month, all the teeth were extracted, thus eliminating the obvious seat of the focal infection.

Course: During this period, the condition of the patient became more acute, pointing to an exacerbation of the case. The patient complained of severe pain in the eyes, lasting a few days after the last extraction. From then on, however, the symptoms subsided. The infiltration of the cornea in both eyes gradually disappeared and the cornea became clear again, although the central part remained thickened for about a year.

Conclusions

As long as the patient had an infection in his mouth, no improvement in the condition of the ulcer of the cornea was noticeable. The improvement came only after two months when the focus of infection was completely removed.

It is convincingly proved in this case that the infection of the eye was secondary to a focus of infection in the mouth. The fact that the conjunctival smear and the dental smear showed the same organisms indicated a case of "direct organismal infection" in which the organism, having been liberated into the blood stream, found lodgment in the corneal tissue.

This case is a fine example of the value of cooperation between the physician and dentist.

993 *Rogers Avenue, Brooklyn.*
235 *Second Avenue, New York.*

[1]Rosenow, E. C.: Elective Localization of Streptococcus, J. A. M. A. 65:1687, 1915.

[2]Haden, R. L.: Elective Localization in Eyes of Bacteria from Infected Teeth, Arch. Int. Med. 32:828, 1923.

[3]Nickel, A. C.: Elective Localization in Animal of Bacteria Isolated in Foci of Infection, J. A. M. A. 87:1117, 1926.

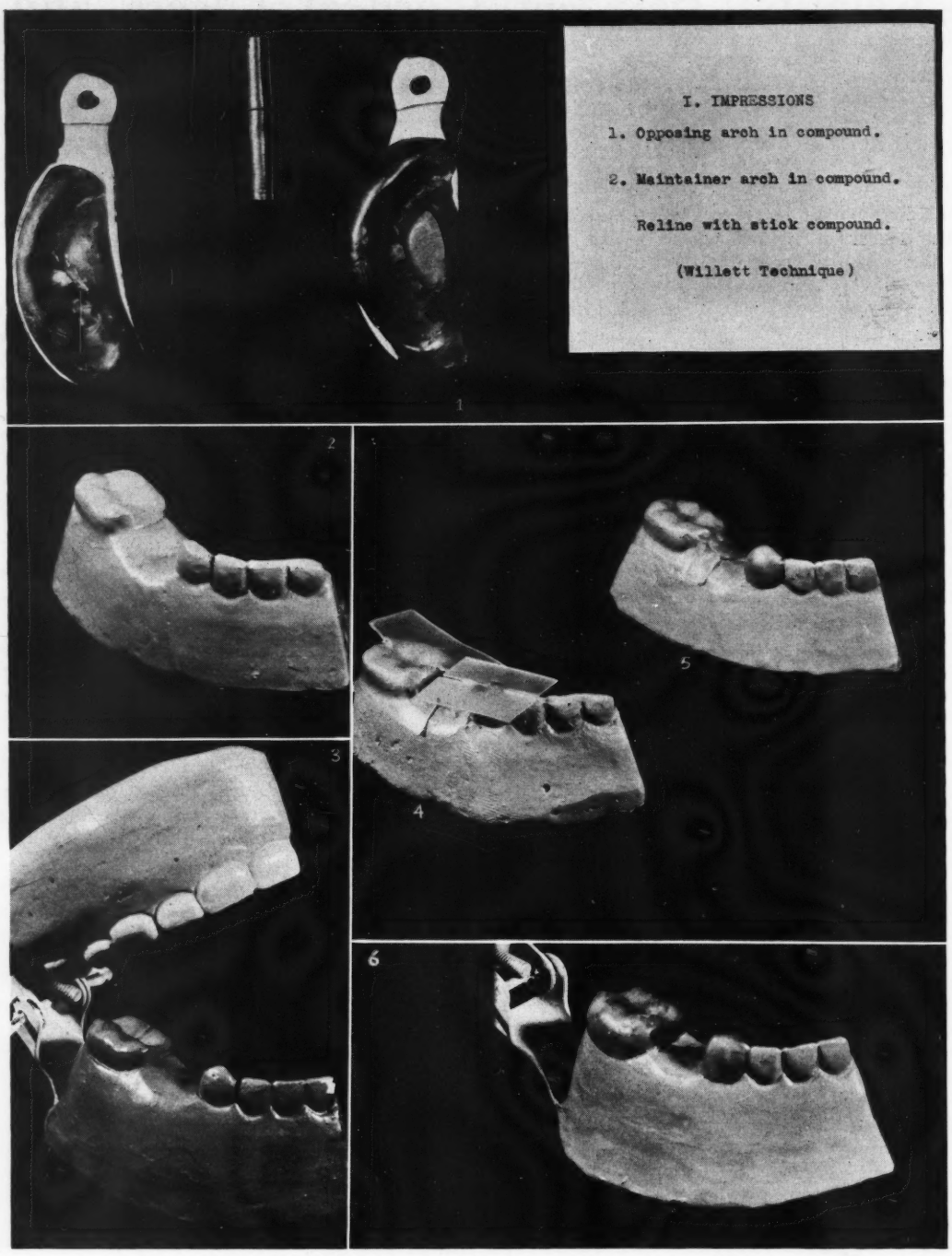


Fig. 1—A snap impression (left) is made. After drying, stick compound is flamed and placed in snap impression over area of teeth where overlays are designated. Impression is tempered in warm water and firmly reseated over teeth. After careful chilling, impression is removed. A sharp impression will be noted, especially at gingival. There are two good reasons in particular for a relined compound impression: (1) to insure close adaptation at gingival; (2) if undercuts are present, they are discovered with difficulty in removal of impression, so that they can be corrected in the beginning. Fig. 2— Cast with molar as it comes out of impression. Cast has been poured in casting investment. Cuspid shows at gingival that it has been extended gingivally. Fig. 3—Cast is ready for waxing. Both abutment teeth have had gingival extended. Fig. 4—Square sheet of wax is first cut on mesial and distal with a hot instrument (shown on cuspid). Either buccal or lingual is then adapted with art gum eraser (as on molar). Fig. 5—Wax is adapted to other side of tooth (molar). Gingival is then sealed and thickened to insure casting and the whole is smoothed. Fig. 6—Loop on molar and arm from cuspid are added. Note that occlusal has not been relieved in wax as this sometimes causes casting failure.

A Full Cast Space Maintainer

GEORGE WARD GLANN, D.D.S., Sioux City, Iowa

Advantages

The space maintainer presented here has the following advantages:

1. It remains in place; it does not become dislodged when eating candy and chewy foods.

2. It considers the physical aspects: (a) does not interfere with the bite; (b) allows for lateral growth of the jaw; and (c) not only maintains space in the arch but keeps the tooth that occludes with the opening in place by a connecting bar.

3. Time at the chair is reduced to a minimum; the maintainer can be constructed during broken appointments or free time.

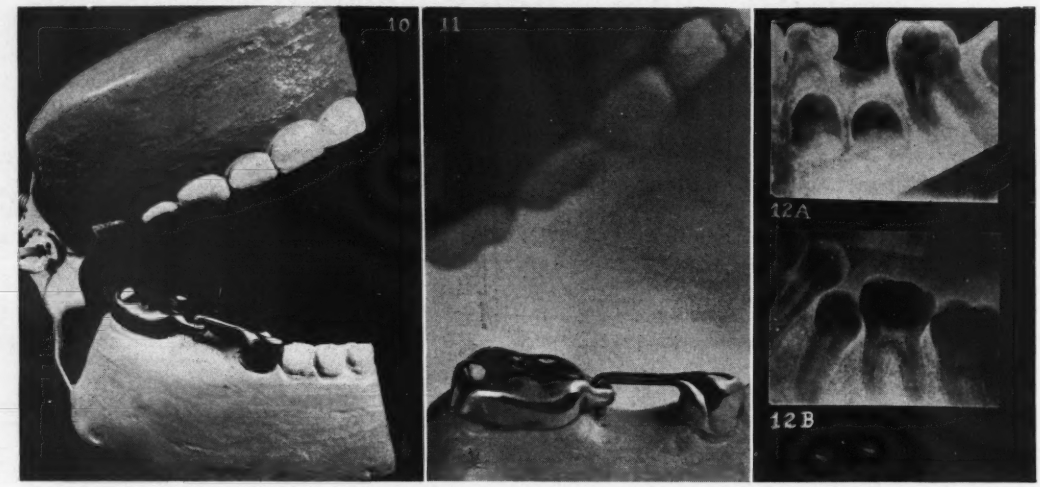
4. No materials are required that a dentist does not have in his office.

Technique

1. Remove undercuts when found on the teeth on which the maintainer is to be placed.

2. A snap compound impression (Baker technique) is made of the arch where the space maintainer is to be used (Fig. 1).

Fig. 7—Plaster matrix, made before sawing apart waxed cast.
Fig. 8—Cast is now being sawed apart. Matrix is shown under cast. When sawing is completed, it will be used to reassemble the parts of the cast, if loop or arm of wax has been broken in the sawing process.
Fig. 9—Because of the joint the two parts of the space maintainer must be cast separately. Spruing represented is adequate for most casting techniques. There are leads to loop and to angle of arm.



Figs. 10 and 11—Castings are adjusted in mouth and occlusal interference is removed before cementing to place.

Fig. 12—It is helpful to convey the idea and principle of the maintainer to the parents of the patient by showing a roentgenogram of the area when a deciduous molar has been extracted prematurely (Fig. A); also, a roentgenogram of the condition to be prevented (Fig. B).

3. The impression is dried and stick compound is flamed and flowed into the impression of the abutment teeth; it is then tempered in warm water and firmly replaced into the mouth.

4. This impression is poured in investment plaster so that the resulting cast may be waxed directly (Fig. 2).

5. An impression of the opposing arch and a wax bite are also taken, so that the casts may be mounted on an articulator.

6. After the casts have been articulated the abutment teeth are prepared for waxing by extending the periphery at the gingival to facilitate waxing (Fig. 3). Care is taken not to make undercuts when extending the gingival.

7. The investment cast is heated slightly and 26 gauge sheet wax is warmed a bit on a hot plate, then adapted to the tooth with an art gum eraser. This is the step used for a Willett type overlay (Figs. 4 and 5).

8. The gingival is sealed and reinforced to insure casting.

9. The loop on the posterior abutment is made of 12 gauge one-half round wax and is melted on the ends by touching it to a hot instrument; then the abutment is placed on the distal abutment tooth. The arm extending from the anterior abutment tooth is made from 14 gauge wax (Fig. 6).

10. After the waxing has been completed, it may be smoothed and polished by any familiar method, such as by flaming or with wet cotton.

11. The base of the cast with the waxed space maintainer is beveled and grooved.

12. The cast is then soaped or painted with separating fluid and a plaster matrix is formed to aid in replacing the parts after they have been sawed in the event that the arm from the anterior tooth is broken in the sawing process (Fig. 7).

13. The cast is then sawed in two, between the abutment teeth (Fig. 8).

14. The waxed parts are sprued, invested, and cast separately (Fig. 9).

15. The finished castings are fitted to the teeth and the necessary parts removed from the occlusal of the casting to prevent interference with the bite (Figs. 10 and 11).

16. The castings are then cemented to place.

Any material that is strong enough for orthodontia appliances or cast crowns is strong enough for casting a space maintainer. There are on the market now, several white metal alloys that are inexpensive and satisfactory, such as Aurinite, C. I. metal, Utiloy and others. Also to be considered is Doctor Willett's formula whereby a dentist can, in his own laboratory by the use of coins, make his own alloy.

Precautions

1. In making a satisfactory space maintainer a Willett overlay will obviate the difficulty of keeping the maintainer in place. The first step in making an overlay is vital to its retention: If all undercuts are not removed before the impression is taken the overlay will not fit well on the completed case.

2. When necessary a separation may be made at the contact point in order that the overlay may extend to the gingival all the way around the tooth.

3. Difficulty occurs when the operator fails to wax or sprue the case heavily enough. The best policy to follow is to add more sprues or to wax heavier, when in doubt. Any bulk that is added to insure casting, however, should not be left on the finished case.

4. If these rules are followed and the overlay is cemented to a tooth that is well dried, stability will be obtained.

408 *Trimble Building.*

Direct Technique for Knife-Edge Cast Crown

CLAUDE R. KRUSE, D.D.S., Colfax, California

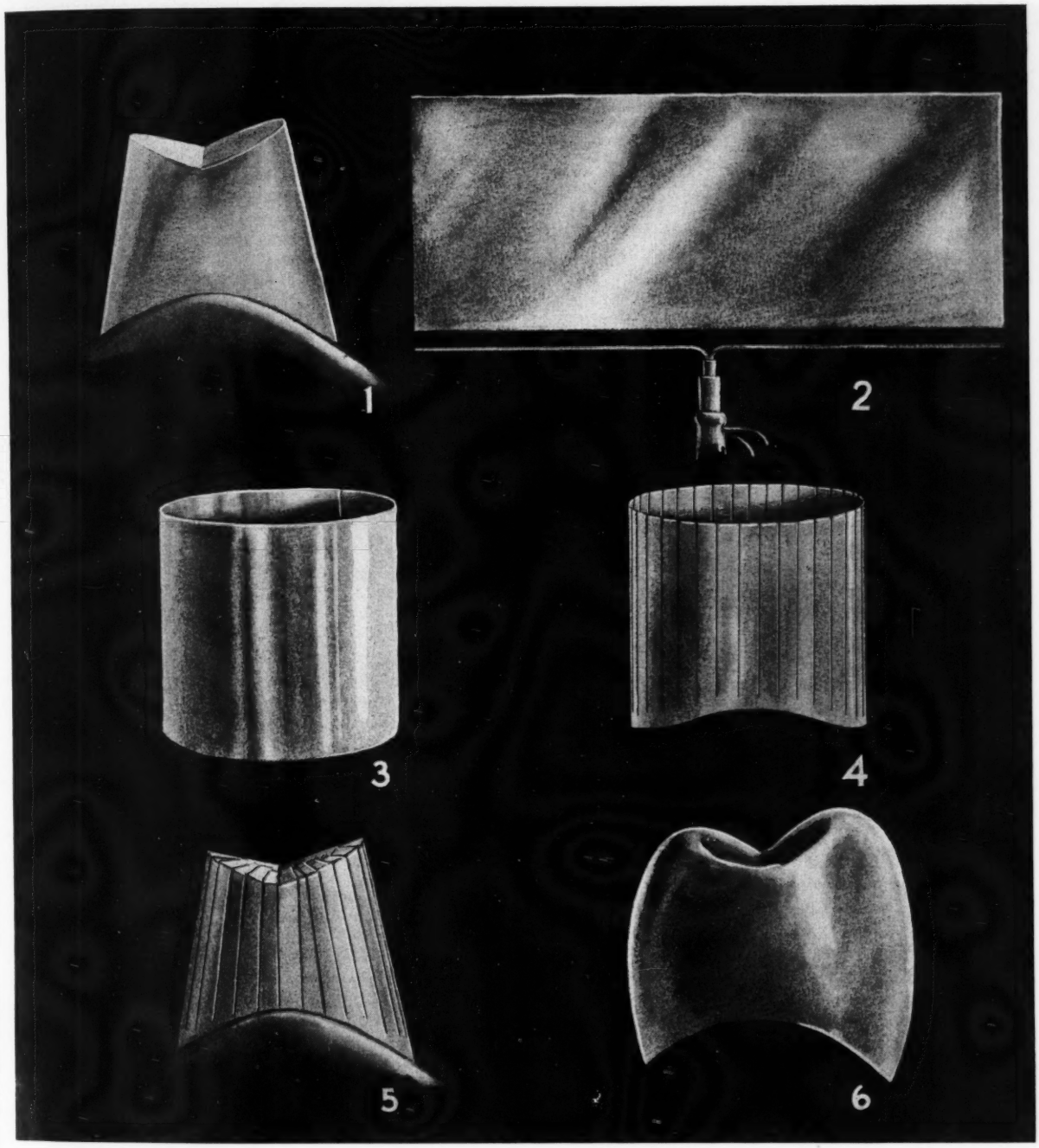


Fig. 1—Crown preparation. This must be tapered so that the crown fits tightly at the gingival with a knife-edge slightly under the gingival margin.

Fig. 2—Gold cut to dentimeter measurement; 22 carat soft gold rolled to 34 gauge and cut wide enough to permit burnishing partly over the occlusal.

Fig. 3—Band soldered.

Fig. 4—Band slit to within 2 mm. of gingival.

Fig. 5—Band burnished to tooth to form matrix, over which inlay wax is melted to form and contour.

Fig. 6—Crown built up in way to form, contour, and occlusion.

Electrosurgery in the Mouth

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THE APPLICATION OF electricity in minor surgery of the mouth as a therapeutic measure is not new. Methods of electrocauterization, electrolysis, pulp testing and light therapy have long been in use for various purposes. Recently the high frequency current has been applied in surgery of the mouth for the destruction of diseased tissue and for cutting through normal tissues with minimal bleeding.

The continued use of high frequency electrosurgical procedure in the last three years, including 150 cases of gingivectomy and other minor surgical procedures by electroresection at the Graduate Hospital of the University of Pennsylvania, has prompted me to present my observations by means of clinical photography.

In the use of high frequency current the scalpel or active electrode remains cold throughout the operation, during which time an intense concentration of current effects a destructive heat in the tissues, resulting in the instantaneous coagulation of the albumen of the tissues. Depending on current density and characteristics, coagulating and cutting effects will result. In sharp contrast to other types of electric modality, such as in the use of faradic or galvanic currents, the manifestation of nerve reaction or shock is entirely absent.

The extent of coagulation depends on the following conditions: (1) The selective resistance of the tissues to the passage of current; (2) current density per square centimeter; and (3) duration of application of electrodes.

The effects of electrosurgery by the high frequency oscillating current may be: (1) Simple dehydration of tissues—fulguration or electrodesiccation by the creation of moderate body heat; (2) electrocoagulation, the current being of such characteristics and of sufficient power as actually to boil tissue juices and coagulate protein matter; and (3) electrosection. With proper frequency and wave form the heat may be concentrated to a tiny area, severing the tissues ahead of the electrode and causing a fine coagulation along the line of cleavage.

Electrosurgical Units Available

The following are the types of electrosurgical units available for general application:

1. *The Spark-Gap Type*—The spark-gap type unit generates a damped oscillating current, a penetrating coagulating current, but a current poor in cutting qualities. Small dental type units employ a bipolar, monoterminal electrode. The current activity is more or less confined between the two electrodes to restrict the area coagulated. This type of unit is limited only to electrocoagulation.

2. *The Tube Type*—The tube type unit is a radio-frequency machine which generates undamped oscillations. Small dental type units utilize three types of circuits:

a) Monopolar - monoterminal, intended for desiccation, having a ball burnisher electrode.

b) Monopolar-biterminal: The indifferent electrode is placed within close proximity of the patient's body, not necessarily touching the flesh. The monopolar electrodes beside the ball burnisher electrodes may be used in this circuit for heavy coagulation and hemostasis. The needle type is used for delicate dissecting and coagulation and sear of the dental pulp.

The wire loop is the most efficient and all-purpose electrode, and may be used for cutting, scalloping, planing, and dividing incisions. With the circuit open, i.e. with the foot off the switch, this instrument will also make an excellent curet for removal of excised tissue.

c) Bipolar - monoterminal electrodes, used only for coagulation (as in type 1 units).

3. *The Blended Current Unit*—The blended current unit permits a simultaneous flow of currents from the oscillating tube and spark gap generators through the active electrode. It is of value in removing malignant growth from vascular and wet areas, such as in the oral cavity, and will prevent hemorrhage from vessels up

(These illustrations appear on pages 22, 23 and 24.)

Fig. 1—A, Monopolar electrodes used for cutting, scalloping, and planing incisions—used with indifferent electrode (D); B, monopolar electrodes: ball burnisher type for desiccation and surface coagulation, without use of indifferent electrode; C, bipolar electrodes; coagulation; D, indifferent electrode plate and cord to terminal; E, Luer-Lok 3 cc. syringe for infiltration; F, tuberculin 1 cc. syringe for infiltration; G, handle for monopolar electrode.

Fig. 2—Local anesthesia using tuberculin syringe—29 gauge needle.

Fig. 3—Preoperative appearance.

Figs. 4 and 5—Wire loop electrode in position; resection of interproximal pocket.

Fig. 6—Appearance following resection.

Fig. 7—Preoperative appearance.

Fig. 8—Appearance following electrosurgery in lower jaw.

Fig. 9—Appearance two weeks later.

Fig. 10—Preoperative appearance.

Fig. 11—Electrode applied.

Figs. 12 and 13—Surface coagulation.

Fig. 14—Preoperative appearance.

Fig. 15—Appearance following electroresection.

Fig. 16—Pericoronal infection.

Fig. 17—Third molar flap resected.

Fig. 18—Incising acute abscess with the knife blade electrode and heavy coagulation.

Fig. 19—Immediately following resection.

Fig. 20—Case healed three weeks.

Fig. 21—Upper right molars with deep pockets—an ideal case for treatment.

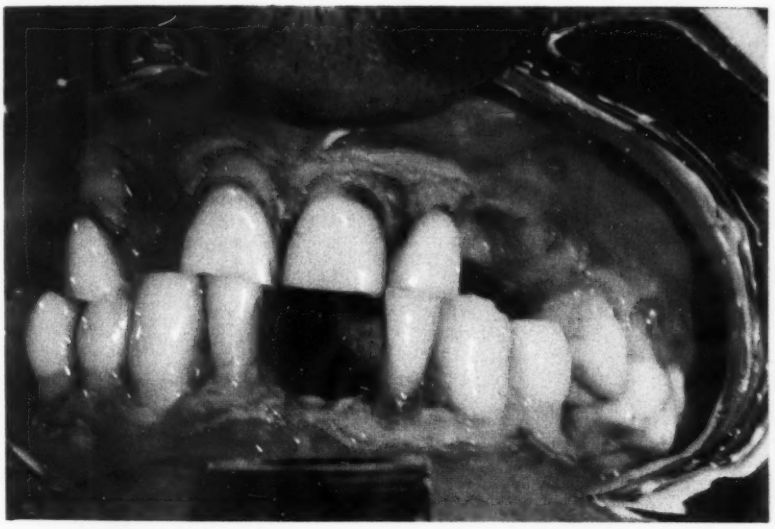
Fig. 22—Advanced periodontoclasia; case treated and healing.

Fig. 23—Ulcerative hypertrophied gingivitis; left side treated.

Fig. 24—Application of cold quartz.

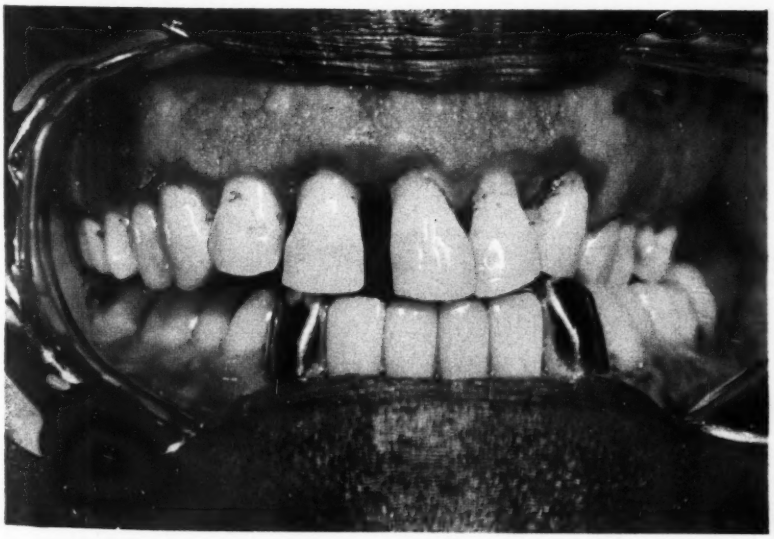
Color Plate No. 1

Method of application of wire loop electrode for resection of diseased tissue. This electrode also used as a probe and curet when power is turned off.



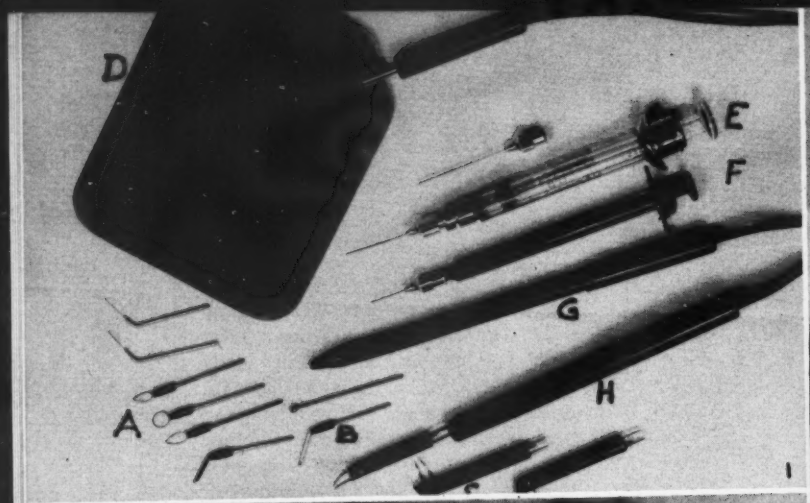
Color Plate No. 2

Appearance of electro-surgically treated areas immediately following treatment. Note resection of interproximal pockets, superficial coagulation and hemostasis. (Mouth of colored patient shows pigmentation.)



Color Plate No. 3

Post operative appearance in four weeks—note healing with soft scar formation and excellent tissue tone. Teeth were firm, pockets had disappeared."



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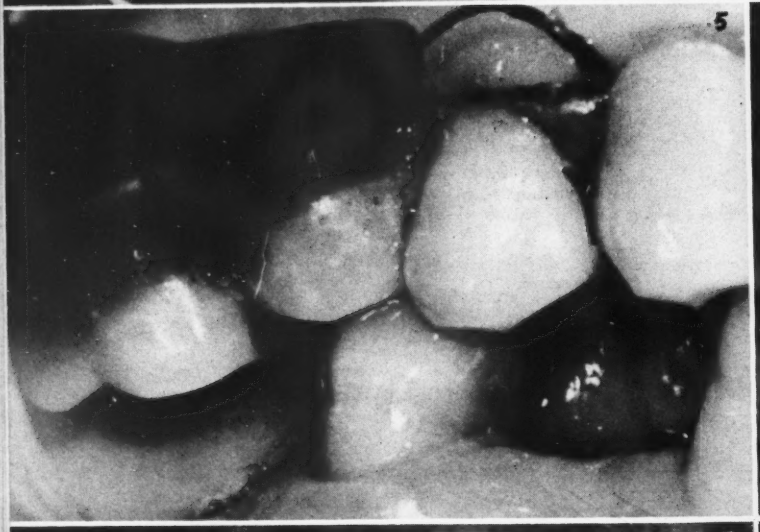
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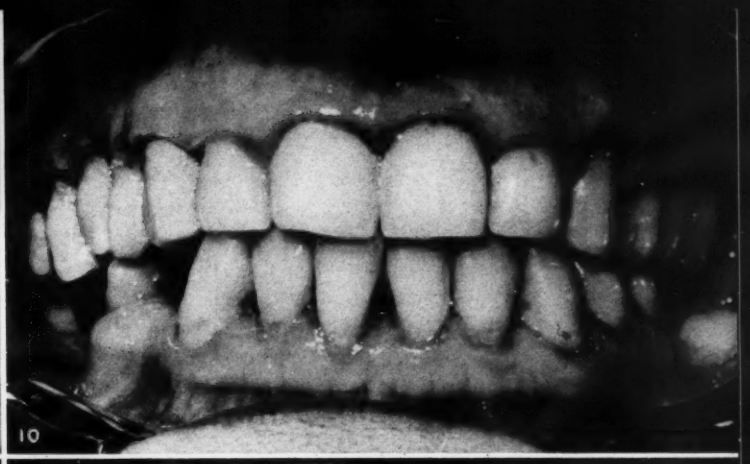
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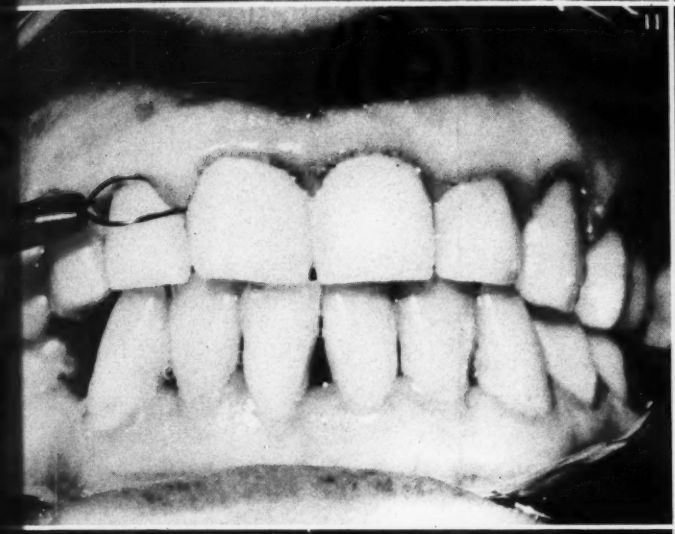
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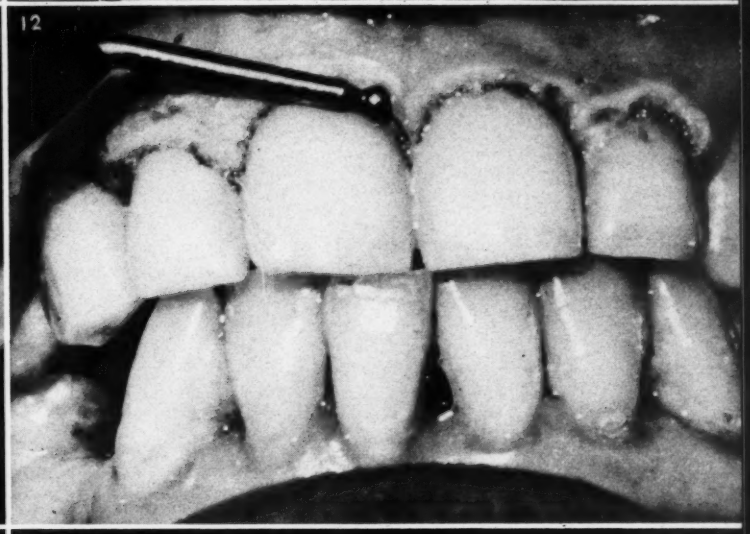
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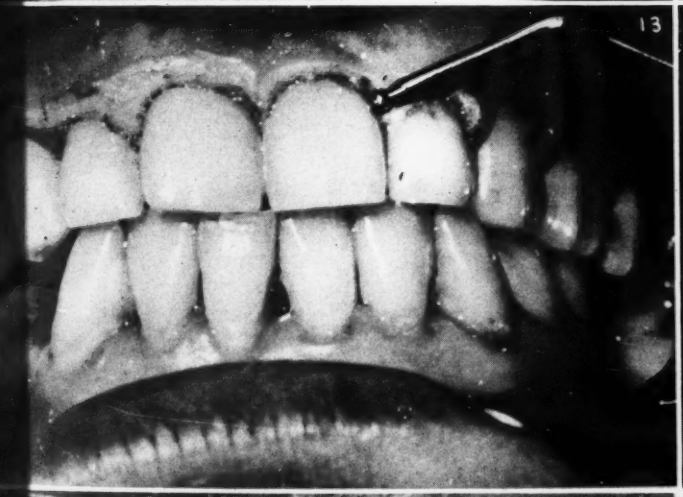
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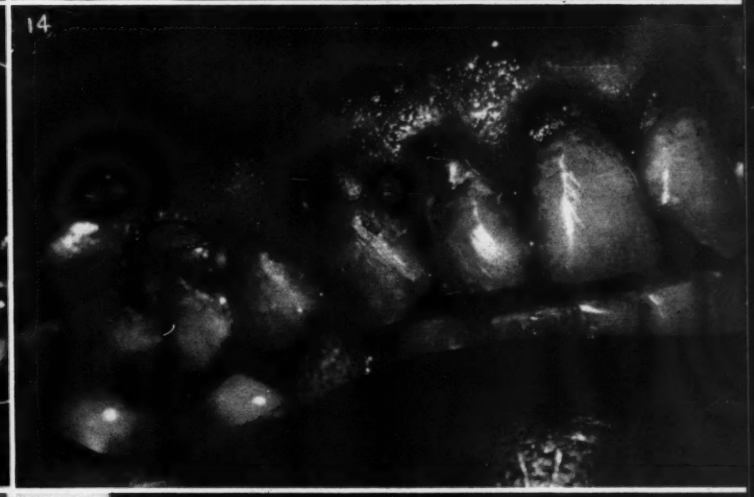
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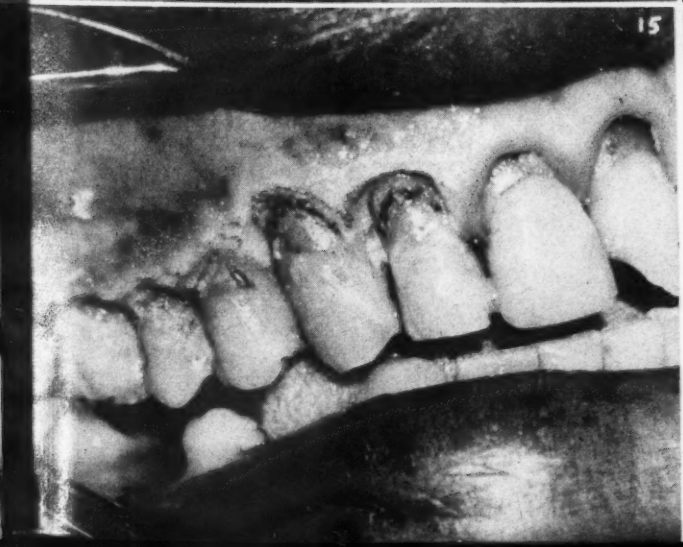
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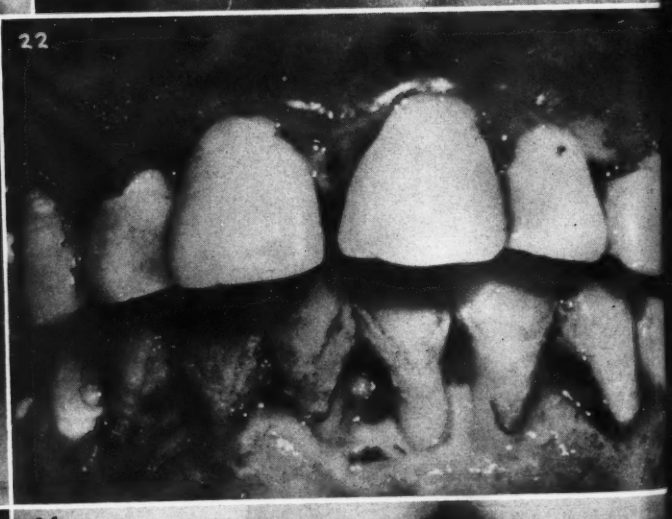
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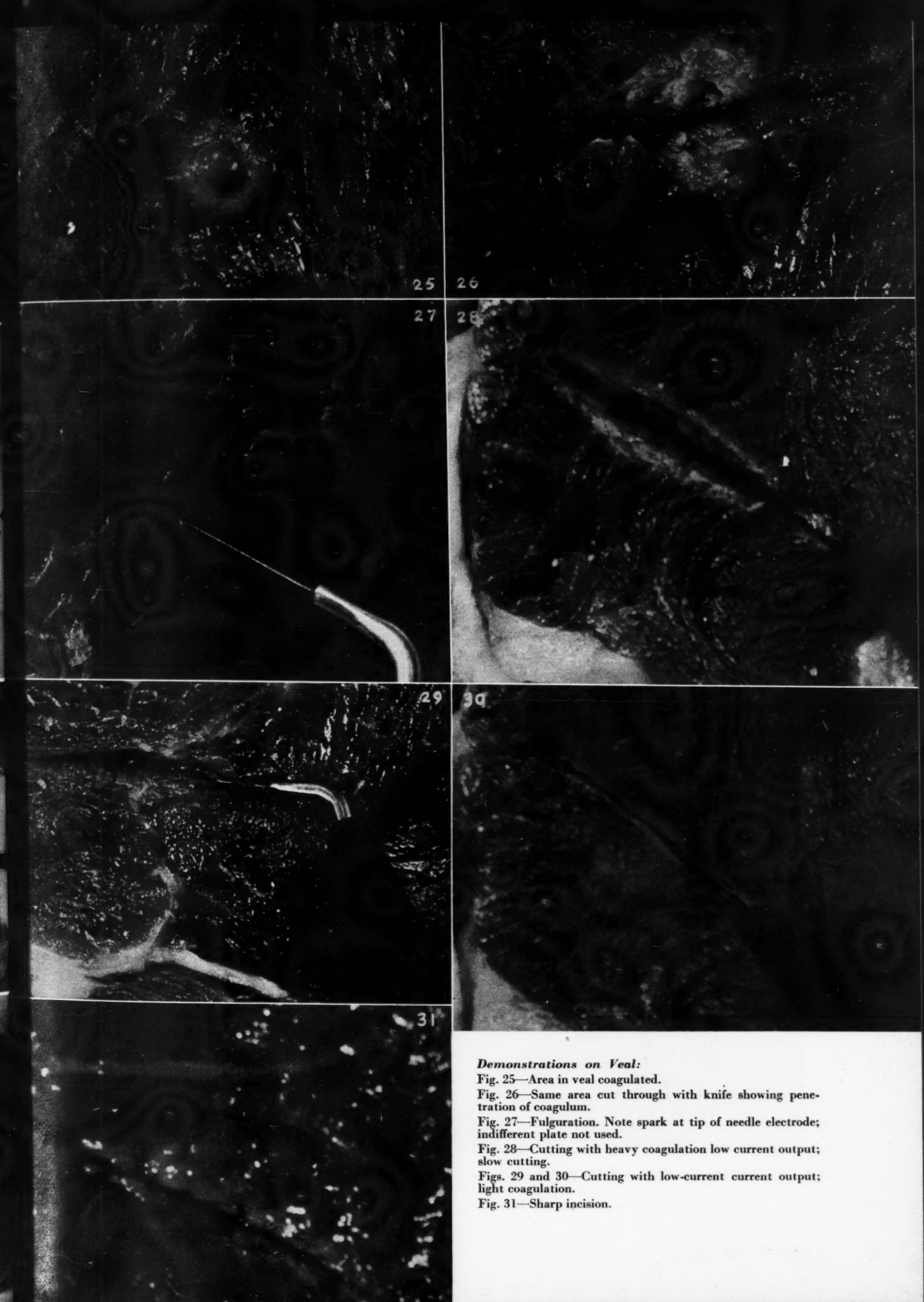


Demonstrations on Veal:

Fig. 25—Area in veal coagulated.

Fig. 26—Same area cut through with knife showing penetration of coagulum.

Fig. 27—Fulguration. Note spark at tip of needle electrode; indifferent plate not used.

Fig. 28—Cutting with heavy coagulation low current output; slow cutting.

Figs. 29 and 30—Cutting with low-current current output; light coagulation.

Fig. 31—Sharp incision.

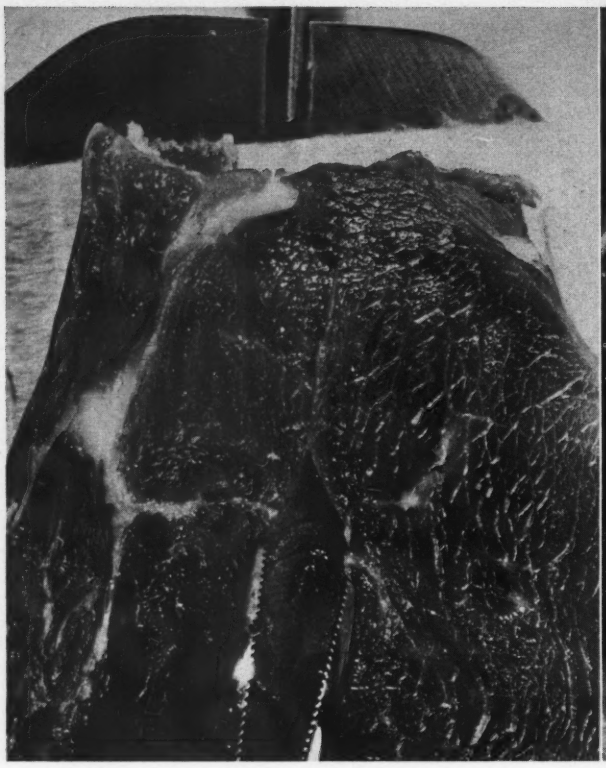


Fig. 32—Incision spread with hemostat.

Fig. 33—Curved incision.

to 1 mm. in diameter. These are large units designed for major surgery.

Our observations lead to convincing evidence that electrosurgery provides a cleaner and drier field of operation, limiting and even eliminating the use of ligatures. The wounds tend to heal rapidly with little pain or toxemia and with soft, pliable scars. The monopolar wire loop scalpel was mostly used in gingivectomy and individual or multiple resection of periodontal pockets; incision of abscesses; resection of third molar flaps; epuli; small fibromas; hypertrophied tissue; or in freeing frenums; and for making surgical flaps.

Anesthesia is obtained by injecting procaine, 2 per cent, and epinephrine. Sufficient depth of anesthesia is desirable at all times. In the selection of

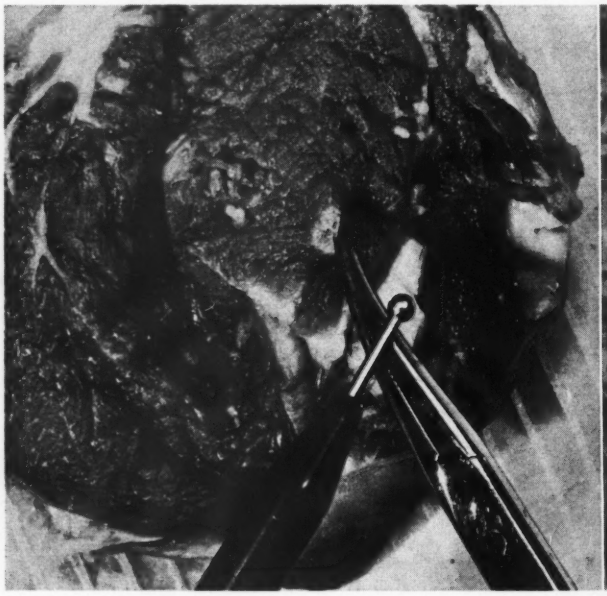


Fig. 34—Coagulating a bleeder through hemostat.

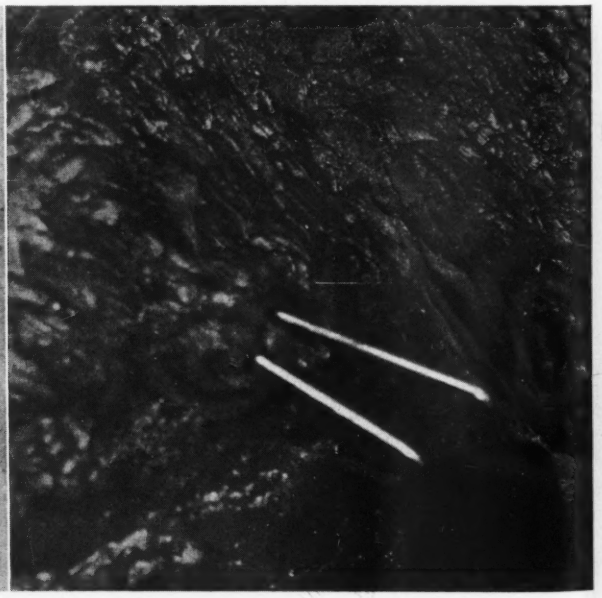


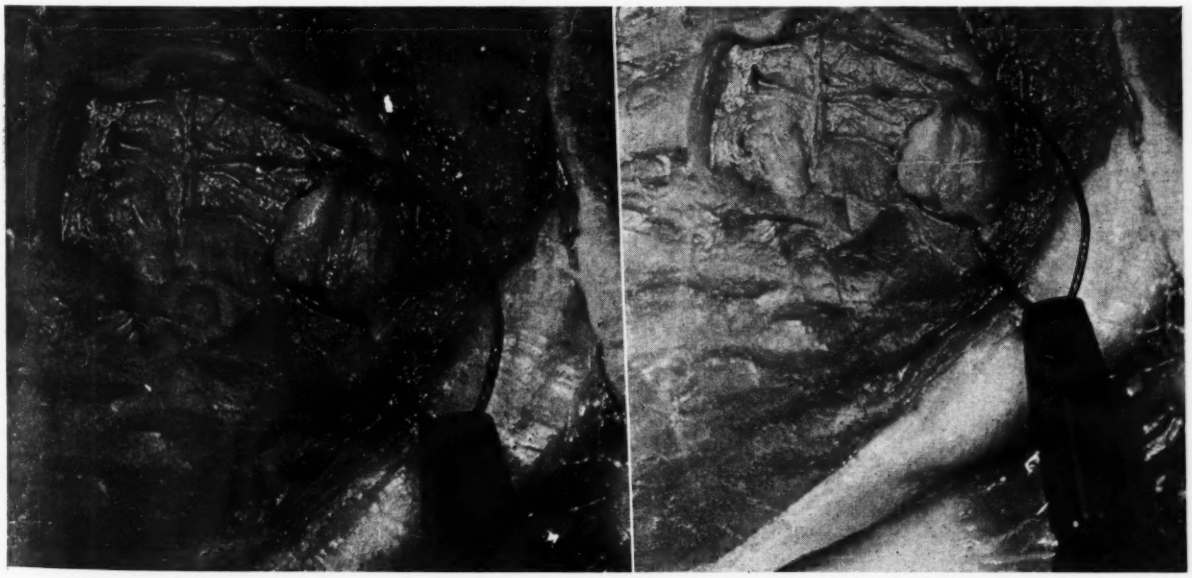
Fig. 35—Bipolar electrode: coagulation.

Figs. 36 and 37—Scalloping incision with loop electrode.

a suitable electrode the heavier blades should be used with a medium current output to obtain deep penetration; the wire electrodes should be used for cutting. These lighter electrodes do not require as much current and with too high a concentration coagulation will be diminished. They will not cut any faster after a certain limit (increase in power) and may result in a sear. Fatty tissues, cartilage, cementum and dentine, and bone are poor conductors of high frequency current; whereas vascular tissues react favorably. In any case the operator, guided by experience, must adjust his unit to suit the case.

Preoperative and postoperative care cannot be over-emphasized. The cooperation of the patient will also influence the prognosis. Full mouth roentgenograms; restoration of mouth hygiene by adequate prophylaxis; relieving occlusal stress; correcting harmful habits; prosthetic restorations; sedation and regulation of diet—all these are highly recommended. The postoperative application of cold quartz ultraviolet ray was found beneficial. Following electroresection the areas may be covered by a protective paste surgical dressing.

A mouthwash, such as Amphyl, 0.5 per cent solution, which owes its germicidal efficacy to a combination of certain alkyl and halogen phenol derivatives (p-chloro-symm. m-dimethyl hydroxybenzene, p-tert, amyl hydroxybenzene) has proved a satisfactory antiseptic (phenol coefficient 10), obtundant and emulsifying and saponifying agent for bac-



Figs. 38 and 39—Planing incision.

terial matter and desquamated cells.

Summary

Electroresection by the monopolar scalpel serves as a delicately controlled knife, cutting without pressure and with control of hemorrhage. All diseased tissue is either removed or exposed, by wire electrodes, and bleeding and oozing are controlled by the ball burnisher types. With necessary preoperative and postoperative care and patient cooperation the prognosis is surprisingly favorable in a majority of cases. Most mouths may be treated in three or four sessions. Postoperative complaints are reasonable. In electrocoagulation methods with the spark-gap machines, with which coagulated tissues are allowed to slough off, excessive after pain, overgranulation and systemic reactions due to heavy absorption of toxins often result. In contrast, electroresection presents a more refined technique, with which esthetic results in gingival outline are possible; pockets are eliminated, and the tissues heal firmly and with excellent tone.

Walnut Park Plaza.

Fig. 40—Incision for biopsy.

AN EASY TECHNIQUE FOR MAKING PORCELAIN PONTICS

(*Continued from page* 14)

lodion. A cheap grade of clear liquid nail polish will do.

5. Spread a thin film of light machine oil on the ridge, and do not wipe, so that the moist porcelain will readily come away from the cast.

6. The soldered bridge should be easily seated and removed from the cast, so as to prevent the adapted unbaked porcelain from fracturing.

7. Keep the facing in place by holding the bridge with the thumb and finger over the facing and pontic while adding moist porcelain and vibrating to place on the cast.

8. Have an excess of porcelain, so that only one bake is necessary.

9. After vibrating to place on the cast, be sure that the porcelain is free of the abutment teeth on the cast and the abutment pieces on the bridge before attempting removal from the cast or bridge.

10. Always finish with super-glaze as the built-up facings contain porcelain of different fusing temperatures: two kinds for trupontic, three kinds for long-pin facing. Fuse superglaze at a temperature below that of the lowest-fusing porcelain.

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The Editor's Page

DENTISTS DO NOT ordinarily consider pellagra as one of the diseases that present mouth manifestations. This disease[1] is a "noncontagious, nonhereditary, clinical syndrome affecting the skin, gastro-intestinal tract and nervous system." Pellagra results from a deficiency of nicotinic acid in the diet. The mouth manifestations, according to Sydenstricker[2] and his associates were not recognized until 1938. They consist of redness and swelling of the tongue and a fiery redness of the mucous membranes of the mouth. Another deficiency disease that presents mouth lesions is what Sebrell[3] calls ariboflavinosis, or a deficiency of riboflavin (vitamin B_2 deficiency). The characteristic mouth lesions of riboflavin deficiency are redness and cracking at the corners of the mouth (cheilitis). Inasmuch as the diets of pellagrins are likely to be generally deficient, there are frequently found coexisting deficiency states, such as beriberi, riboflavin deficiency, and vitamin A deficiency.

It seems that the mouth manifestations frequently are prodromal in nature and may appear before the frank signs of pellagra are evident. When dentists are confronted with intractable lesions about and in the mouth, including inflammation of the lips and ulceration, stomatitis, and glossitis, it is well to explore the possibility that a pellagra may be present.

The factors that predispose to the development of pellagra are partly economic. People who subsist on a one-sided diet, rich in corn products, are likely to develop this deficiency state. Sharecroppers of the south and relief clients of the north, because of inadequacies of diet, may develop this deficiency condition. It is possible, however, for people in the higher economic brackets to present this disease. Sinclair[4] quotes Goldberger, Eddy, and Dalldorf as emphasizing that the factors "which interfere with assimilation of food, such as loss of teeth, pyorrhea, gastro-intestinal disorders, food fads and voluntary restriction of diet, [are] second in importance to economic conditions that affect food supply." Although we have been in the habit of associating pellagra with alcoholics and the poverty-stricken, it is possible that people following some food folly may present the condition.

More and more we are coming to regard inflammatory conditions in the mouth as being the expressions of deficiency diseases rather than infectious states. Sinclair[4] in his interesting article on vitamin deficiency indicates that the deficiency of vitamin B_1 which is frequently characterized by neuritides and hypersensitivity may be in part responsible for extreme sensitiveness of the dental structures. He observed that after the administration of large doses of vitamin B_1 the sensitivity to instrumentation of the dentin as well as the soft dental tissues was definitely decreased.

In the treatment of pellagra, Spies has made the most notable contribution. By the use of nicotinic acid, Spies[5] and his associates have found dramatic changes in the entire personality of the pellagrin: "We regularly observed fading of the mucous membrane lesions, blanching of the erythema of the cutaneous lesions when present, a tendency toward the return of normal gastro-intestinal function, remission of mental abnormalities when they were present . . . and a disappearance of the abnormal redness of Vincent's infection."

Nicotinic acid, according to Spies, is a constituent of food and is present in yeast, the wheat germ, and liver. In the treatment of the lesions of pellagra, the nicotinic acid or its derivatives are administered in drug form. Spies has explained[6] that "Vincent's infection very frequently occurs along with pellagrous lesions. The organisms decrease after the pellagra has been treated." He further makes the distinction that "nicotinic acid is curative for the mouth lesions of pellagra but that nicotine seems to have no effect."

In the presence of mouth lesions of a not easily explainable nature, dentists are urged to refer patients immediately to competent physicians to ascertain the possibility of the presence of a deficiency disease.

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[1] Cecil, R. L.: A Textbook of Medicine, Fourth Edition, Philadelphia, W. B. Saunders Company, 1938, page 584.
[2] Sydenstricker, V. P.; Geeslin, L. E.; Templeton, C. M., and Weaver, J. W.: Riboflavin Deficiency in Human Subjects, J. A. M. A. **113**:1697 (November 4) 1939.
[3] Sebrell, W. H. and Butler, R. E.; Riboflavin Deficiency in Man, U. S. P. H. S., Washington, Public Health Reports, **53**:2282 (December 30) 1938.
[4] Sinclair, J. A.: Vitamin A and B Deficiency—An Etiologic Factor in Acute, Subacute and Chronic Vincent's Infection and Other Dental Conditions, J. A. D. A. **26**:1613 (October) 1939.
[5] Spies, T. D.; Bean, W. B., and Stone, R. E.: The Treatment of Subclinical and Classic Pellagra: Use of Nicotinic Acid, Nicotinic Acid Amide and Sodium Nicotinate, with Special Reference to the Vasodilator Action and the Effect of Mental Symptoms, J. A. M. A. **111**:585 (August 13) 1938.
[6] Spies, T. D.: Personal communication to Sinclair. See footnote 4.

Consider TISSUE-TOXICITY in the antiseptic you employ

Employed routinely for dental procedures, Hexylresorcinol 'Solution S. T. 37' is germicidal and exerts a local analgesic effect.

ALTHOUGH many chemical compounds possess highly efficient germicidal action, the method by which this activity is tested signifies only bacterial destruction *in vitro*. For clinical use of an antiseptic on or within the body, relative freedom from tissue-toxicity is of major consideration.

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Germicide	*Toxicity Index*
Hexylresorcinol	0.9
Mercurial I.	1.5
Silver Protein Strong U.S.P.	1.7
Silver Nitrate	1.8
Phenol	2.0
Silver Protein Mild U.S.P.	2.5
Mercurial II	7.2
Mercurial III	169.0

This important study of antiseptics has ample clinical substantiation in the growing widespread use of Hexylresorcinol 'Solution S.T. 37' by dentists for the prophylaxis and treatment of infections.

1. J. Bact. Vol. 36, No. 3, p. 264, Sept. '38

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NOTES ON THE *Cuff*

Hippocrates Said It . . .

More than 2300 years ago Hippocrates, the father of medicine, in his famous Oath, had his say about the wagging tongue. Because people in the healing arts live so close to human life, human failings, human sufferings and weaknesses, it is particularly important that what is seen and heard does not "pass the barrier of our teeth." We have all heard the Oath of Hippocrates and some of us have taken the Oath in our callow youth on graduation from dental college when perhaps some of its meaning was lost on us. Its warning to scandalmongers is always timely repetition: "Whatever in connection with my professional practice, or not in connection with it, I may see or hear in the lives of men which ought not to be spoken abroad, I will not divulge, as reckoning that all such should be kept secret."

It is easy for dentists to fall into the temptation of repeating to one patient something that we might have heard from another regarding the "lives of men." It is pretty good general practice never to repeat anything we hear in the dental office and never to mention the name of another patient, not only with respect to what we might have heard but concerning that patient's dental experience about which we know. We have all encountered snoopers who tried to learn from us what services we had performed for someone else. It would be a fine piece of knowledge for some people to know who wore dentures, who had cysts, who were the sufferers from pyorrhea. Regardless of how successful our treatment might have been or how successful the results, we should not identify any condition recounted with the name of the person involved.

We need not disparage by direct statement, by the shrug of the shoulder, by the lifting of an eyebrow, with the question, "Who did *that?*" the dentistry we see in situ.

(*Continued on page* 32)

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BS POLISHERS run cool and smooth. They do not throw the abrasive. Quickly and thoroughly clean deep points of pits and fissures and remove stubborn stains.

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(*Continued from page* 30)

We must not inoculate patients with doubt and dissatisfaction concerning the service of a previous dentist. No patient was ever impressed with the importance of a dentist who attempted to arrive at the impressive state by belittling a previous dentist. No patient was ever struck by the magnanimity of our nature through a petty remark regarding previous treatment. It would be well for all of us to make it a point whenever we see especially good dentistry to commend it and in those cases in which we see services poorly performed, it would be well for us to discipline ourselves to hold our tongues, to restrain our shoulder muscles, to control the elevators of the eyebrows.

Word from Holland . . .

A fine example of imperturbability of spirit is shown in a letter from a dentist in Holland. With Nazi hordes pressing at the east wall, ready to overflow into their country at any minute, this dentist from Holland has taken the time to write in detail and at length concerning a technique for bridge repair that he has developed. Nothing in his letter indicated the tension under which he and his people must be living. Such people cannot easily be beaten.

Fears We Live Under . . .

We talk a lot about the control of dental pain and go to great lengths to describe techniques of injection and induction anesthesia. Too often we forget that in the technique for the control of pain, we may easily superimpose a fear, more difficult to overcome than the pain itself. How do we try to prepare people mentally for the anesthetic experience? Don't most of us very casually and abruptly

(*Continued on page* 34)

The WAPPLER *Electro Dental* SCALPEL

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WRITE FOR DESCRIPTIVE LITERATURE AND REPRINTS

PROVIDES TISSUE-CUTTING, hemostatic and electro-coagulating currents of correct characteristics in instances of gingival infection where either excision with the electric scalpel or electro-coagulation is indicated. Generating both electro-coagulating currents as required in the control of pyorrhea and tissue cutting currents for excision of diseased tissues with minimal bleeding, the Wappler Electro Dental Scalpel combines with these basic modalities a unique design permitting their application for all dental surgery

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Everywhere are adopting electrosurgical methods (electric cutting and electro-coagulation) because of its manifest advantages over the scalpel. Briefly enumerated these advantages are:*

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2. Less tissue manipulation.
3. Complete sterilization.
4. Bloodless operating field.
5. No wiping or aspirating.
6. More rapid healing.
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With the electric scalpel, diseased gingival tissue may be excised with less trauma than with the scalpel without noticeable sear and almost complete absence of bleeding. With the Wappler Electro Dental Scalpel the tissues are parted or severed by the electrode without application of force or pressure. The handpiece is simply guided.

In addition to its uses in* major oral surgery the electric scalpel is indicated in such cases as.....

Erupting teeth	Gingivectomy
Pericoronal infections	Frena
Overhanging or hyperplastic tissue	Muscle attachments
Swollen interproximal papillae	Movable tuberosities
	Hemorrhage in socket
	Hemorrhage in tissue

*Zimmer, Morris A., D.D.S., "The Radio Knife in Dentistry" Dental Survey, July, 1936.

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THE WORD OF MOUTH ANTISEPTIC

VINCE

It speaks well for VINCE that many a prescriber first learned of this oral antiseptic by word of mouth. One dentist sees another and when they get around to talking "shop," Vince enters into the conversation. If one is unfamiliar with the preparation, the other will urge him to try it. If both are confirmed users, they compare notes on the various uses to which they put Vince. Most dentists use Vince as an all-round oral antiseptic. They prescribe it as a routine mouthwash and gargle; suggest its use in keeping dentures and appliances clean; use it as an aid in the treatment of Vincent's and other infections.

You, too, can learn of the acknowledged suitability of Vince for these purposes. A trial quantity will be gladly sent you. Please write your request on your letterhead. Vince is supplied in tins of 2, 5 and 16 ounces.

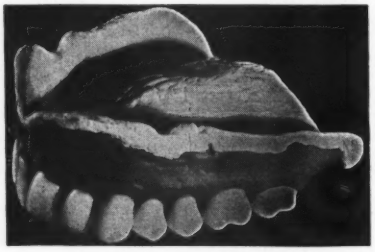
Vince Laboratories, Inc., 121 West 18th Street, New York City

"Sure, I know a good dentist"

"If it's plates you want you couldn't get a better man than Dr. Clark over in the Dayton Building. I had a terrible time trying to get some plates to fit and do the job right until I went to him. He certainly fixed me up in a hurry and I know he'll do the same for you. Believe me, he knows his business."

What is such a recommendation worth? Is it hard to get? Not at all, when the patient's plates really satisfy.

What brings this kind of result? A certain combination of knowledge, experience and skillful technic, to be sure . . . and when you add to these the use of Dr. Kelly's Impression Paste, you are putting in that extra little measure of accuracy which makes for SUPERIOR ADAPTATION, the difference between a "passable" result and the kind which makes a patient enthusiastic and glad to tell of his good fortune.



"Kelly's Paste" is Easy to Try

Why not order a package of "Kelly's Paste" and try it in your own work? If, after a real trial, you are not highly pleased with the results, simply return the package for full credit. The fact that this absolute guarantee has stood for more than six years with practically no returns speaks for itself. Kelly-Burroughs Laboratory, Inc., 143 N. Wabash Ave., Chicago, Ill.

At Dealers', $2.50 (Only a Few Cents per Impression)

Dr. KELLY'S Impression Paste

[For full information with suggested technics, send coupon, page 40 . . . .]

(*Continued from page* 32)

announce, if we announce at all, that we are going to give an anesthetic? Then, don't we withdraw from some hiding place a syringe, ready for the injection, and scarcely with any preliminary, ask the patient to open his mouth while he looks terrified at the needle which resembles to him a tenpenny nail? Aren't most of the jittery reactions to local anesthesia due to psychic trauma rather than a drug response? In our use of nitrous-oxide gas, do we not usually whirl out the apparatus, slip the mask over the face and begin induction without reassurance to the patient?

In taking impressions, how often do we prepare patients for the mouth full of mush that is to come by telling them what we are going to do? Is it any wonder that people sometimes react unfavorably when they are confronted with hot or cold, soft or hard material which they may fear will block off their air passages? The average dentist in taking an impression is at the chair one minute, then retreats to the mysteries of the laboratory and comes rushing back with a metal, horseshoe-like tray full of material which he slaps into the patient's mouth without forewarning.

How often do we prepare the patient for the removable appliance? After the appliance has been constructed, most of us are so anxious to see whether it fits or not that we jam it into the patient's mouth without preliminaries.

I believe that much of the dislike of the dental experience comes not from the pain but from the unknown and unexplained quantities. A few minutes spent in advance of treatment to tell the patient what we are going to do will dispel fears and represent therapy well considered.

The Automobile Manufacturers Discover Dentistry . . .

Collier's magazine for November fourth carried a double-page story on "How to get your car ready for Winter." The story told how prevention of trouble even with regard to the mechanism of an automobile is far better than treatment once trouble has begun. This is the boost the automobile manufacturers give dentistry:

"There is no better example of the value of preventive methods than the comfort, beauty and economy achieved by preventive dentistry. In

Leave a Good Taste in your Patients' Mouths!

A good taste in your patients' mouths literally speaking, will likewise create a good taste figuratively speaking. Not only is Buffalo Dental Prophylaxis Paste a splendid tooth cleaning medium from your own standpoint, it is also more pleasant for the patient than other prophylaxis materials. Try a jar, then judge for yourself. It costs $1.00 at your dealer's.

Buffalo Dental
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BUFFALO, N. Y., U. S. A.

like manner, Preventive Service for the automobile makes a tremendous contribution to the comfort, economy and safety of motoring."

It is too bad that we dentists aren't so alert to our opportunities as the automobile people are to theirs and to ours.

For Smaller and Better Dental Books . . .

It would be better if many of the dental textbooks flooding the market had never been written. One grows weary with rereading the same stuff year after year in books that are supposed to be new. If dental authors would be less concerned with the poundage of their books and more concerned with spreading new and pertinent information in a compressed form, everyone would be better off. The publishers would sell more books and dentists would read more than they do. A pair of scissors and a paste-pot do not make an author. Plagiarizing or interminable lifting even with credit from predecessors is not enough. A recent fat dental book has, for example, a chapter of 85 pages, 90 per cent of which is composed of direct quotations from the works of other people. A book purporting to be original cannot be a mere compilation of excerpts or a review of the literature. Literary research has a place—but not in clinical dental textbooks. Big books terrify most of us. We are afraid to begin reading them lest we'll never finish. There are too many demands on time to sit down with a textbook that could occupy a reader to the end of his days. Smaller textbooks in the dental field, carrying only original and improved material, which would sell for a dollar or two, should be welcomed by dental readers.—E. J. R.

DENTAL MEETING

Dates

Rhode Island State Dental Association, annual meeting, Providence, January 17-18, 1940.

Eastern Dental Assistants, regular

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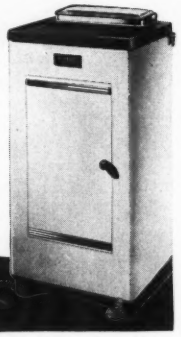

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(Or please use coupon on page 41)

meeting, Allied Dental Council, 145 West 57th Street, New York City, January 31.

Pennsylvania State Dental Hygienists, annual meeting, Benjamin Franklin Hotel, Philadelphia, January 30-February 2.

Greater Philadelphia Society, annual meeting, Benjamin Franklin Hotel, Philadelphia, January 30-February 2.

Southern Dental Association, annual meeting, Hotel Patten, Chattanooga, Tennessee, February 5-6.

Chicago Dental Society, midwinter meeting, Stevens Hotel, Chicago, February 12-15.

Minnesota Dental Association, annual meeting, St. Paul Auditorium, St. Paul, Minnesota, February 27-29.

Cleveland Dental Society, annual Spring meeting, Statler Hotel, Cleveland, Ohio, April 8-9.

Mississippi Dental Association, annual convention, Robert E. Lee Hotel, Jackson, April 15-17.

Louisiana State Dental Society, sixtieth annual meeting, Monroe, Louisiana, April 18-20.

Missouri-Kansas Dental Meeting, annual meeting, New Municipal Auditorium, Kansas City, Missouri, April 28-May 1.

New Jersey State Dental Society, annual meeting, Berkeley-Carteret Hotel, Asbury Park, May 8-10.

Dental Society of the State of New York, annual meeting, Hotel Statler, Buffalo, May 14-17.

Five State Post Graduate Clinic, eighth annual meeting, Willard Hotel, Washington, D. C., May 19-23.

Pennsylvania State Dental Society, seventy-second annual meeting, aboard ship on the S. S. SOUTH AMERICAN of the Georgian Bay Line, sailing from Erie, June 13-16.

American Association of Orthodontists, thirty-eighth annual meeting, Edgewater Beach Hotel, Chicago, May 13-16.

Tennessee State Dental Association, seventy-third annual meeting, Hotel Peabody, Memphis, May 13-16.